

[Research Funding](#)

The case for peer-informed review

by [Richard N. Zare](#)

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*This is a guest Editorial by **Richard N. Zare**, Marguerite Blake Wilbur Professor in Natural Science and professor of chemistry at the Department of Chemistry at Stanford University. He is a former chair of the National Science Board of the National Science Foundation.*

Research groups in universities often initiate important discoveries and inventions, but they generate less innovation than what science-funding agencies expect and desire. This innovation shortfall raises the question whether the present research-support system is in need of some change. I propose for your consideration a variation of peer review, which I call “peer-informed review.” A broad outline follows, but modifications are invited.

I suggest that high-risk, high-reward proposals be submitted to a group of paid experts, whom I call “champions.” I want champions to be highly respected active researchers who fully understand the challenge of making innovative research succeed. For a proposal to be funded it must have one of the group of experts become the proposal’s advocate. The champion should take sole responsibility for funding the proposal for a sufficient period of time so that it might be supported by other means, such as a regular proposal or through industrial collaboration. The performance of each champion would be judged on a regular basis but not before enough time has elapsed that judgment is not based on any given project—that is, not proposal by proposal—but rather on the aggregate of all proposals funded by the champion.

Of course, no champion can fund a proposal from someone with whom the champion has had previous close contact. If, among this group, there is no one who wishes to champion a given proposal, then that proposal is rejected. When a champion selects a proposal for consideration, then the champion must seek two or more outside opinions from peers in the research field to guide the champion in making a final decision about funding. The champion chooses the peer reviewers, but the champion is not bound by the experts’ recommendations, although they become part of a record.

I would like submission of proposals to occur at any time and for funding decisions to be made in three months or less after submission. My experience is that new ideas judged to be worthy must be pursued relatively quickly, and with passion, for them to succeed.

This peer-informed review system with champions might be thought to be similar to the strong manager model of the US Defense Advanced Research Projects Agency. I would emphasize what I think is an important distinction. The ideas of what projects are to be pursued come from the community of investigators, not from the strong managers. In my opinion, the proper role of funding administrators is not to imagine that they can foresee what the future will bring but rather to enable the future to unfold. History repeatedly teaches us that the community as a whole is better at shaping and predicting the future than any small collection of smart administrators.

Champions need to communicate with each other what they are doing. The internet has greatly eased this burden. Champions need not reside geographically in the same location. In this way, champions should be able to continue their own active research programs, making it more appealing to recruit and retain champions.

Champions should have the power to increase funding for proposals that appear to be reaching their targets and stop funding for proposals that appear to be missing their objectives. Experience also teaches us that if a project is likely to fail, stopping funding early is the best policy.

I suggest establishing the champions as a semipublic, semiprivate organization that takes equity in the start-ups that spring from these funding efforts. Initially, I imagine that it will be government funded, but I hope, in time, that it will have its own funds through the process of bringing discoveries and inventions to the marketplace.

I do not suggest that peer-informed review replace the present funding system but rather enhance it by offering a fast track for high-risk, high-reward projects. To my knowledge, no country has a system in place that uses an analogous approach to promote innovation; I would be delighted to see some brave funding agency try this experiment.

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